

Listing of the claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-7. (Canceled)

8. (New) An electrosurgical generator comprising:

a drive circuit operatively coupled to at least one electrode of the electrosurgical generator and configured to provide electrosurgical energy at the at least one electrode;

a sensing circuit coupled to the at least one electrode and configured to sense voltage and current from the at least one electrode and to generate a first sensor signal representative of the voltage and a second sensor signal representative of the current;

a processing circuit configured to determine a phase difference between the first and second sensor signals;

a determining circuit configured to generate an electrosurgical energy control signal as a function of the phase difference; and

a control circuit configured to control the electrosurgical energy as a function of the electrosurgical energy control signal.

9. (New) An electrosurgical generator according to claim 8, wherein the control circuit determines a difference between the electrosurgical energy control signal and a preset reference signal.

10. (New) An electrosurgical generator according to claim 9, wherein the preset reference signal is selected through a user control.

11. (New) An electrosurgical generator according to claim 8, wherein the processing circuit implements a Goertzel algorithm to calculate phase of each of the first and second sensor signals.
12. (New) An electrosurgical generator according to claim 8, wherein the processing circuit includes a digital signal processor implementing a second order recursive Goertzel filter.
13. (New) An electrosurgical generator according to claim 8, wherein the determining circuit is configured to generate an electrosurgical energy control signal as a function of the phase difference and first and second sensor signals.
14. (New) A method for controlling an electrosurgical generator, comprising the steps of:
 - providing an electrosurgical generator which selectively transmits electrosurgical energy to at least one electrode;
 - sensing voltage and current from the at least one electrode and generating a first sensor signal representative of the voltage and a second sensor signal representative of the current;
 - determining a phase difference between the first and second sensor signals;
 - generating an electrosurgical energy control signal as a function of the phase

difference; and

controlling the electrosurgical energy as a function of the electrosurgical energy control signal.

15. (New) A method according to claim 14, the controlling step includes the step of determining a difference between the electrosurgical energy control signal and a preset reference signal.

16. (New) A method according to claim 15, wherein the controlling step further includes selecting a present reference signal through a user control.

17. (New) A method according to claim 14, further comprising the step of: implementing a Goertzel algorithm to calculate phase of each of the first and second sensor signals.

18. (New) A method according to claim 14, wherein the determining step includes the step of providing a processing circuit having a digital signal processor implementing a second order recursive Goertzel filter.

19. (New) A method according to claim 14, further comprising the step of: generating an electrosurgical energy control signal as a function of the phase difference and first and second sensor signals.